

WHAT IS CLAIMED IS:

1. An information recording/reproducing apparatus characterized in that said apparatus comprises recording data multiplexing means for multiplexing at least encoded video data and encoded audio data, record data storing means for storing data outputted from said recording data multiplexing means, management-information-generation-destined data generating means for generating data required for generating management information for reproducing data recorded on said recording medium on the basis of data obtained from said recording data multiplexing means, management information storing means for storing said management information, management information generating means for generating said management information on the basis of output of said management-information-generation-destined data generating means for writing or reading said management information in or from said management information storing means, recording medium drive processing means for recording or reading on or from the recording medium at least information outputted from said recording data storing means or information outputted from said management information generating means, recording status storing means for storing status information indicative of status of recording processing, and consolidative management means for managing said recording data multiplexing means, said recording data storing means,

said management-information-generation-destined data generating means, said management information generating means, said management information storing means, said recording medium drive processing means and said recording status storing means, wherein said consolidative management means is arranged to write or read out said status information onto or from said recording status storing means.

2. An information recording/reproducing apparatus set forth in claim 1, characterized in that said apparatus comprises said recording medium drive processing means for recording or reading out information on or from a recording medium, record data demultiplexing means for demultiplexing the encoded video data and the encoded audio data from the information read out from said recording medium, said management-information-generation-destined data generating means for generating data required for generating management information for reproducing data recorded on said recording medium on the basis of the data obtained from said record data demultiplexing means, said management information storing means for storing said management information, said management information generating means for generating said management information on the basis of output of said management-information-generation-destined data generating means for writing or reading said management information in or from said management information

storing means, management information reading means for reading out said management information from information read out from said recording medium for outputting said management information to said management information storing means, and consolidative management means for managing said record data demultiplexing means, said management-information-generation-destined data generating means, said management information generating means, said management information storing means, said recording medium drive processing means, said management information reading means and said recording status storing means, wherein said recording medium drive processing means is designed to record the information outputted from said management information generating means on said recording medium, and wherein said consolidative management means is designed to write or read out said status information onto or from said recording status storing means.

3. An information recording/reproducing apparatus set forth in claim 1, characterized in that said recording status storing means is implemented as storing means which holds the stored information even when electric power supply is broken.

4. An information recording/reproducing apparatus set forth in claim 2, characterized in that the information recorded on said recording medium is so processed as to be reproducible information on the

basis of said status information read out from said recording status storing means.

5. An information recording/reproducing apparatus set forth in claim 2, characterized in that the information read out from said recording medium is checked on the basis of said status information read out from said recording status storing means to thereby delete data from a record unit containing unreproducible information up to an end of a file.

6. An information recording/reproducing apparatus set forth in claim 2, characterized in that a group of management units composed of information read out from said recording medium is checked on the basis of said status information read out from said recording status storing means to thereby delete the management unit including the record unit containing unreproducible information, and that those management units which include a starting one of said management unit group up to the record unit containing said unreproducible information are defined as a first management unit group while the management units including the record unit containing said unreproducible information up to the end of said management unit group are defined as a second management unit group.

7. In an information recording/reproducing apparatus set forth in claim 2, an editor apparatus characterized in that the information outputted from

said recording data storing means is recorded in the form of a data file on said recording medium with the information outputted from said management information generating means being stored on said recording medium as first and second plural sets of management information files, and that said apparatus comprises file system manage processing means for managing the files so that the file can be written or read out on or from said recording medium in a predetermined file format or a new file can be generated from two files, first management information file read processing means for reading said first set of management information file from said file system manage processing means, first management information storing means for storing said first set of management information read out from said first management information file read processing means as first management information, management information file write processing means for reading out said first management information from said first management information storing means to thereby write said first management information in said file system manage processing means as said first set of management information file, second management information file read processing means for reading out said second set of management information file from said file system manage processing means, second management information storing means for storing said second set of management information read out from said second management

information file read processing means as second management information, combine processing means for generating new management information from the information stored in said first management information storing means and the information stored in said second management information storing means to thereby write said new management information in said first management information storing means, wherein said data file and said plural sets of management information files are combined in one set.

8. In an information recording/reproducing apparatus set forth in claim 7, an editor apparatus characterized in that plural sets of said data file and said management information file recorded on said recording medium include two or more sets of said data file and said management information file and that said two or more sets of said data file and said management information file are combined in one set.

9. An information recording/reproducing apparatus set forth in claim 7, characterized in that a first set of said data file and said management information file recorded on said recording medium are checked on the basis of said status information read out from said recording status storing means to thereby alter an identifier of said first set to a second identifier in the case where the unreproducible information is included in said first set, wherein a new data file and a new management information file to

10. A recording apparatus for recording video/audio data on a recording medium, comprising video encoding means for encoding an analog video signal, audio encoding means for encoding an analog audio signal, video/audio/management information multiplexing means for generating data required for generating management information data for making random access to said recording medium and effectuating special reproduction of said recording medium for thereby multiplexing the data required for generating said management information data, encoded video data outputted from said video encoding means and encoded audio data outputted from said audio encoding means, a stream buffer for storing multiplexed data outputted from said video/audio/management information multiplexing means by a predetermined amount for writing said multiplexed data onto said recording medium as a bit stream file, a volatile management information expansion memory for storing said management information data, management information generating means for generating management information data from the data required for generation of said management information data to thereby write said management information data in said volatile management information expansion memory while writing said

management information data onto said recording medium as a management information file, management information expanding means for reading out said management information file from said recording medium to thereby expand said management information file on said volatile management information expansion memory, recording medium drive means for directly reading/writing data from/onto said recording medium, a nonvolatile recording status memory which is a nonvolatile memory for storing process of recording processing, and consolidative management means for managing consolidatively said video encoding means, said audio encoding means, said video/audio/management information multiplexing means, said stream buffer, said management information generating means, said management information expanding means, said volatile management information expansion memory and said recording medium drive means, to thereby write/read the status of processings thereof in/from said nonvolatile recording status memory.

11. A recording information repairing apparatus, characterized in that said apparatus comprises video/audio/management information demultiplexing means for reading out a bit stream file recorded on a recording medium to thereby demultiplex encoded video data, encoded audio data and data required for generating management information data, a volatile management information expansion memory for storing



said management information data, management information generating means for generating management information data from data required for generation of said management information data to thereby write said management information data in said volatile management information expansion memory while writing said management information data onto said recording medium as a management information file, management information expanding means for reading out said management information file from said recording medium to thereby expand said management information file on said volatile management information expansion memory, recording medium drive means for directly reading/writing data from/onto said recording medium,

a nonvolatile recording status memory which is a nonvolatile memory for storing process of recording processing, and consolidative management means for managing consolidatively said video/audio/management information demultiplexing means, said management information generating means, said management information expanding means, said volatile management information expansion memory and said recording medium drive means, to thereby write/read the status of processings thereof in/from data of said nonvolatile recording status memory.

12. An editor apparatus, characterized in that said apparatus comprises a recording medium having an area for recording plural sets of management

information files for managing an encoded picture data file and a picture data file, recording medium drive processing means for writing/reading out information onto/from said recording medium, file system manage processing means for writing/reading out a file onto/from said recording medium in a predetermined file format and/or combining two files, management information file read processing means for commanding reading of said management information file from said file system manage processing means, a management information expansion memory for storing therein said management information file read out from said management information file read processing means as management information expansion data, management information file write processing means for reading out said management information expansion data from said management information expansion memory to command writing of said management information expansion data in the file system manage processing means as said management information file, backup management information file read processing means for commanding reading of a backup management information file from said file system manage processing means, said backup management information file being a file of a same format as said management information file but differing from said management information file, a backup management information expansion memory for storing therein said backup management information file

read out from said backup management information file read processing means as backup management information expansion data, and combine processing means for combining integrally the information of said management information expansion memory and the information of said backup management information expansion memory to write the combined information in said management information expansion memory, wherein plural sets of said picture data files and said management information files are combined together into one set.

13. In an editor apparatus set forth in claim 3, a recording apparatus characterized in that said apparatus comprises moving picture compression-encode processing means for performing compression-encoding of analog moving pictures, sound compression-encode processing means for performing compression-encoding of analog sound, moving picture/sound multiplex processing means for multiplexing compression-encoded moving picture data outputted from said moving picture compression-encode processing means and compression-encoded sound data outputted from said sound compression-encode processing means, management-information-expansion data generate processing means for acquiring information required for management information file generation from said moving picture/sound compression-multiplex processing means to write additionally said information in management information expansion data expanded on said management

information expansion memory as management information expansion data, a stream buffer for storing once temporarily a multiplexed stream outputted from said moving picture/sound compression-multiplex processing means, stream buffer managing means for commanding writing of said multiplexed data into said file system managing means from said stream buffer as a multiplexed stream file, a nonvolatile status management memory which is a nonvolatile memory for storing process stage statuses of recording processing, repair processing means for repairing format of said management information file or said multiplexed stream file to restore a normal format thereof when said management information file or said multiplexed stream file is abnormal, and activate processing means designed upon activation thereof to supervise said nonvolatile status management memory, issue a command for expanding said management information file on said management information expansion memory in dependence on status, command said repair processing means to repair the management information file and said multiplexed stream file, command said repair processing means to alter names of the management information file and said multiplexed stream file, and combine plural sets of said picture data files and said management information files into one set.

14. An information recording/reproducing method for recording picture/sound data on the basis of said

management information, characterized in that control means is provided for controlling operations in general inclusive of said recording and reproduction and storing means is provided for storing statuses, wherein said control means is so arranged as to store sequentially in said storing means status discriminating information indicative of operating statuses such as recording, reproduction, edition and the like, and wherein upon activation, said control means reads out said status discriminating information from said storing means to analyze said picture/sound data in accordance with said status discriminating information for thereby correcting said management information and said picture/sound data themselves into information and data each of proper format.

15. An information recording/reproducing method set forth in claim 14, characterized in that when it is decided on the basis of said status discriminating information read out from said storing means that information succeeding to a specific location of said picture/sound data is not reflected yet in said management information, analysis is performed for said picture/sound data from the location where said picture/sound data is not reflected in said management information by acquiring the information from said management information.

16. An information recording/reproducing method set forth in claim 14, characterized in that when it is

decided on the basis of said status discriminating information read out from said storing means that an intermediate portion of said picture/sound data is not reflected yet in said management information, analysis is performed for said picture/sound data from a leading location thereof.

17. An information recording/reproducing apparatus in which the information recording/reproducing method set forth in claim 14 is adopted.

18. An information recording/reproducing method set forth in claim 14, characterized in that when improperness is detected in an intermediate portion of said picture/sound data in the course of picture/sound data analyzing operation performed in dependence on said status discriminating information, a management-dedicated subunit of said picture/sound data which contains said improperness is deleted.

19. An information recording/reproducing method set forth in claim 14, characterized in that when improperness is detected in an intermediate portion of said picture/sound data in the course of picture/sound data analyzing operation performed in dependence on said status discriminating information, said management information is so updated that a management-dedicated subunit of said picture/sound data containing said improperness can be handled independently as a management-dedicated unit of a higher rank, and that

said management-dedicated unit handled independently is handled as an attribute not to be outputted for reproduction.

20. An information recording/reproducing apparatus in which the information recording/reproducing method set forth in claim 18 is adopted.

21. An information recording/reproducing apparatus in which the information recording/reproducing method set forth in claim 19 is adopted.

22. An information recording/reproducing method characterized in that said method comprises a recording data multiplexing step of multiplexing at least encoded video data and encoded audio data, a record data storing step of storing data outputted from said recording data multiplexing step, a management-information-generation-destined data generating step of generating data required for generating management information for reproducing data recorded on said recording medium, a management information generating step of generating said management information on the basis of output from said management-information-generation-destined data generating step, a management information storing step of storing said management information, a step of reading out said management information stored in said management information storing step, a recording medium drive processing step

of recording/reading on/from a recording medium at least the information stored in said recording data storing step or the information stored in said management information storing step, a recording status storing step of storing status information indicative of statuses of recording processing, and a step of reading out said status information stored in said recording status storing step.

23. An information recording/reproducing method set forth in claim 22, characterized in that said method comprises said recording medium drive processing step of recording information on said recording medium or reading the information from said recording medium, a record data demultiplexing step of demultiplexing the encoded video data and the encoded audio data from the information read out from said recording medium, said management-information-generation-destined data generating step of generating data required for generating management information for reproducing data recorded on said recording medium on the basis of the data obtained from said record data demultiplexing step, said management information generation step of generating said management information on the basis of the output from said management-information-generation-destined data generating step, said management information storing step of storing said management information, a step of outputting said management information to the management information storing step



from said management information generation step or reading out said management information stored in said management information storing step, a management information reading step of reading out said management information from the information read from said recording medium to thereby output said management information to said management information storing step, a step of recording the information outputted from said management information generation step on said recording medium, a recording status storing step of storing status information indicative of statuses of recording processing, and a step of reading out said status information stored in said recording status storing step.